



Senior Executive Sealift Forum

Higher Speed Sealift Panel

Wave Piercing Catamaran
112m SEAFRAME

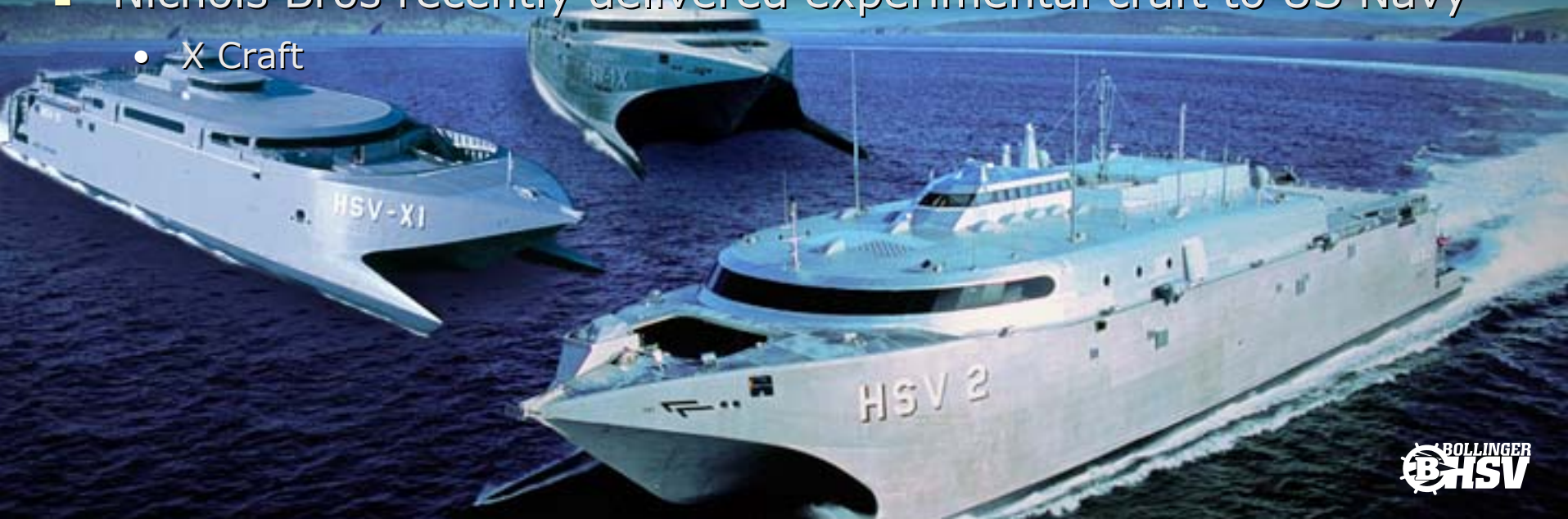
April 21, 2005

Demand for High Speed Sealift

- Update on US Military HSVs
- High Speed Sealift Challenge
- US Shipbuilding Capability
- US Military Requirements vs Commercial Requirements

US Military HSV Update

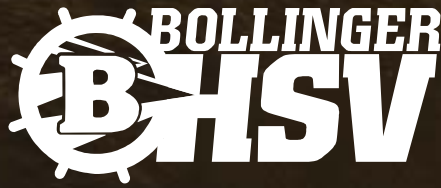
- Bollinger/Incat has three successful charters with the US Military
 - HSV-X1 Joint Venture
 - TSV-1X Spearhead
 - HSV 2 Swift
- Austal USA has a successful charter with US Marine Corps
 - WestPAC Express
- Nichols Bros recently delivered experimental craft to US Navy
 - X Craft



An aerial photograph of the USS Ashland (LST-1195), a tank landing ship, sailing on the water. The ship's hull number '1195' is visible on the bow. The ship is white with a dark hull, and the American flag is visible on the bow. The ship is moving towards the viewer, leaving a wake.

Higher Speed Sealift Challenge

- Military HSV has a requirement for high speed, increased range & high cargo density
 - Lessons learned from existing leases places high demand on range & payload
 - High speed, high maneuverability, shallow draft are key components for the intratheater capability
 - JHSV program requirements take advantage of all of the above
- Commercial demand for higher speeds and higher cargo density
 - Commercial ferry industry is pushing the envelop for increased capacity, range & speed
 - Congestion on major thoroughfares and in major cities along the coast is increasing
 - Utilizing these type of assets is a commercially viable solution



■ Bollinger HSV

- Proven technology provides a benchmark for future craft
- Current experimental craft have provided lessons learned on user requirements
- HSVs have been deployed and used in support of US Military requirements
- INCAT design is a proven platform with more than 30 vessels operating around the world



■ Austal USA

- Experienced in large aluminum vessel building
- Currently expanding their existing facility to a size large enough to fabricate large HSVs
- Currently fabricating large aluminum vessels



- Derecktor
 - Experience in large aluminum vessel building
 - Planning facility upgrades to accommodate fabrication of large HSVs
 - Have a workforce trained in advanced construction techniques



■ Nichols Brothers

- Experienced in large aluminum vessel construction
- Just completed and delivered the X Craft for Office of Naval Research (ONR)
- X Craft is a US Navy experimentation vessel for future HSV

Future Wave Piercing Catamaran Capability

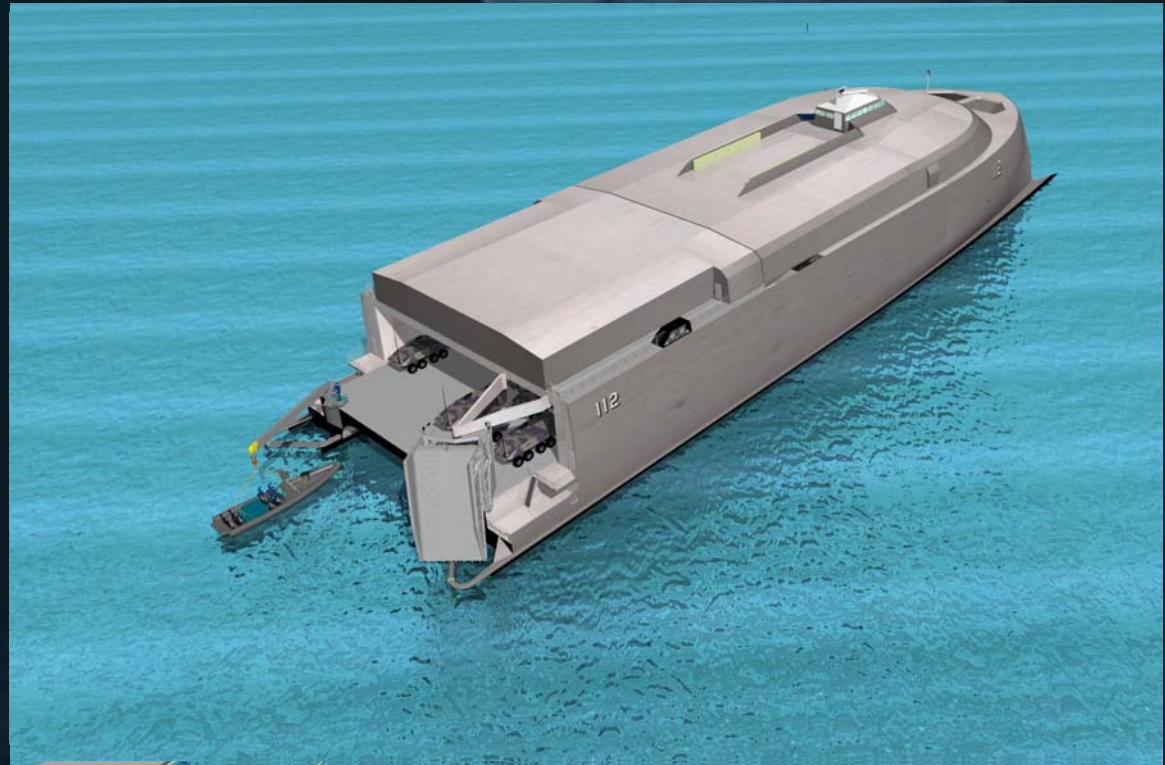
112 m Seaframe Philosophy

Similar to the commercial airframe model the Seaframe approach provides for multiple configurations utilizes the same basic Seaframe platform

Principal Particulars

LOA	112.6m
Beam	30.3m
Draft (loaded)	3.8m
DWT	1000 tonnes
DWT (overload)	1500 tonnes*
Loaded Speed	40+ knots
Cargo deck area	2500 sqm

*Full Displacement DWT at reduced speed.



Military Wave Piercing Catamaran Capability

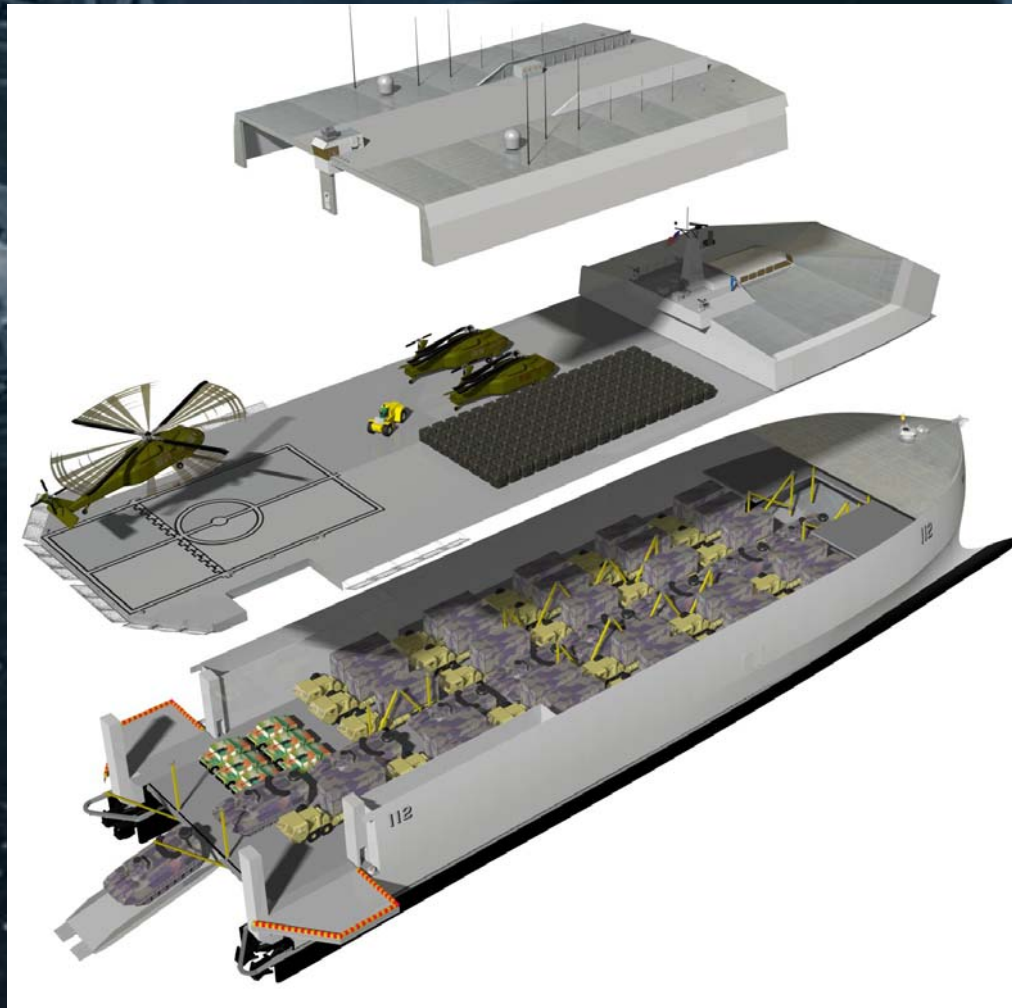
112 m Seaframe Transporter

- Multi Mission
- Full Flight Deck
- Transport Variant



Military Wave Piercing Catamaran Capability

112 m Seaframe Helo Transport



Principal Particulars

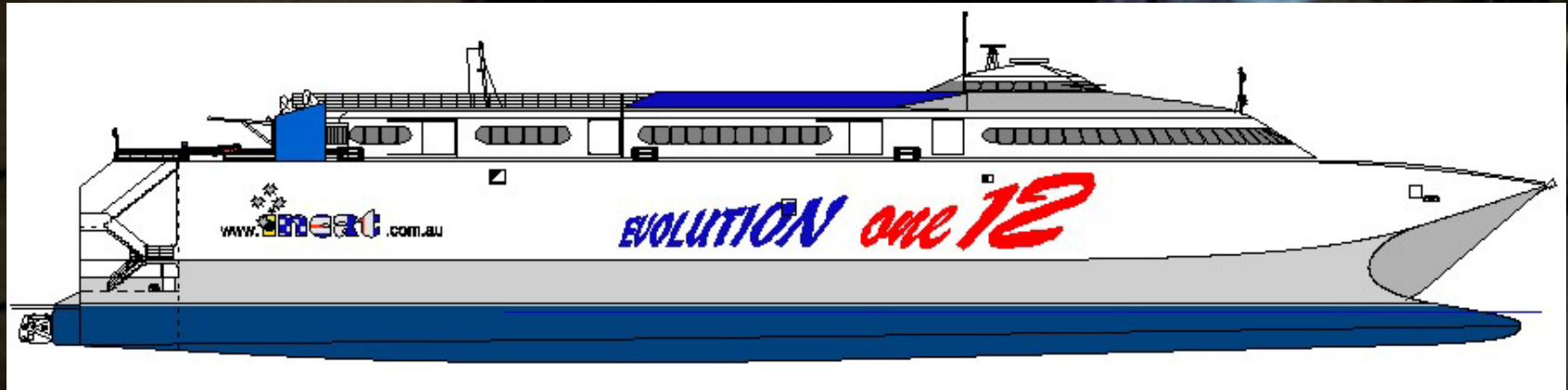
LOA	112.6m
Beam	30.3m
Draft	3.3m
DWT	1338 tonnes*
Loaded Speed	40+ knots
Cargo deck area	2500 sqm

Inter-ocean helo transport load
example:

1 Deck (Mission deck)	12 x H53's
02 Deck	9 X AH1's + 5 X UH1's
Total	26 Aircraft

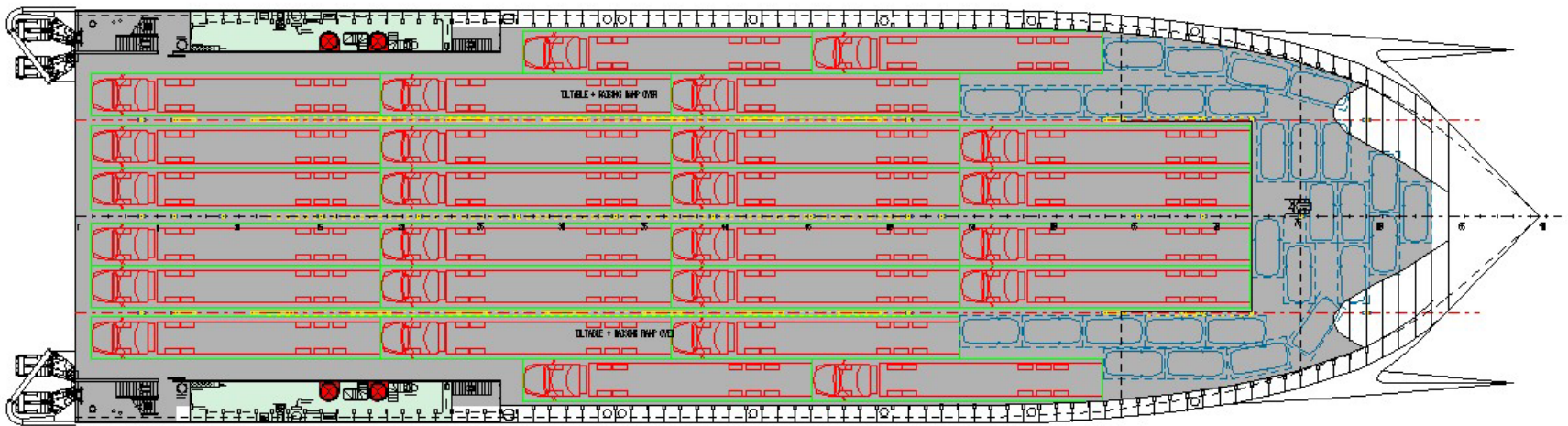
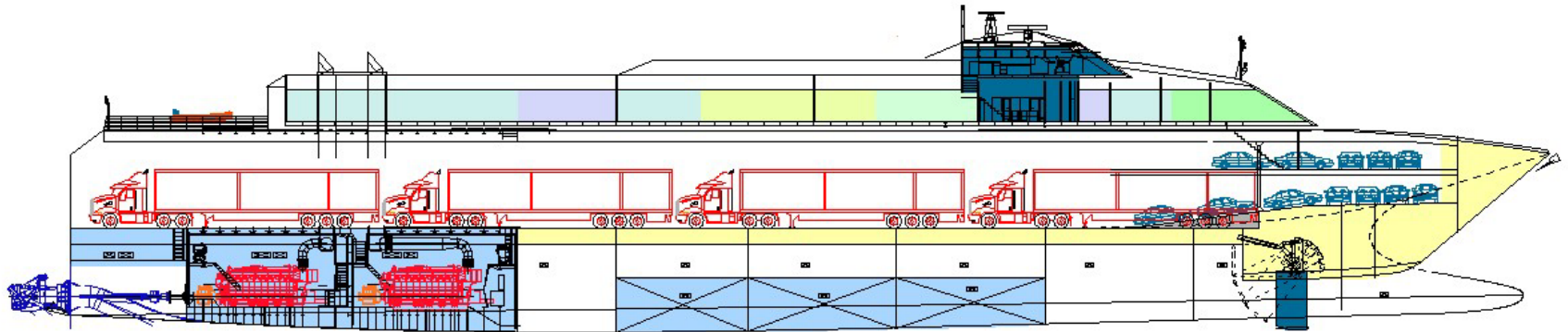
*Full Displacement DWT.
Available Operational DWT
(@ 40+ Knots)
Approximately 1000 Tonnes

Commercial Wave Piercing Catamaran Capability 112m SEAFRAME

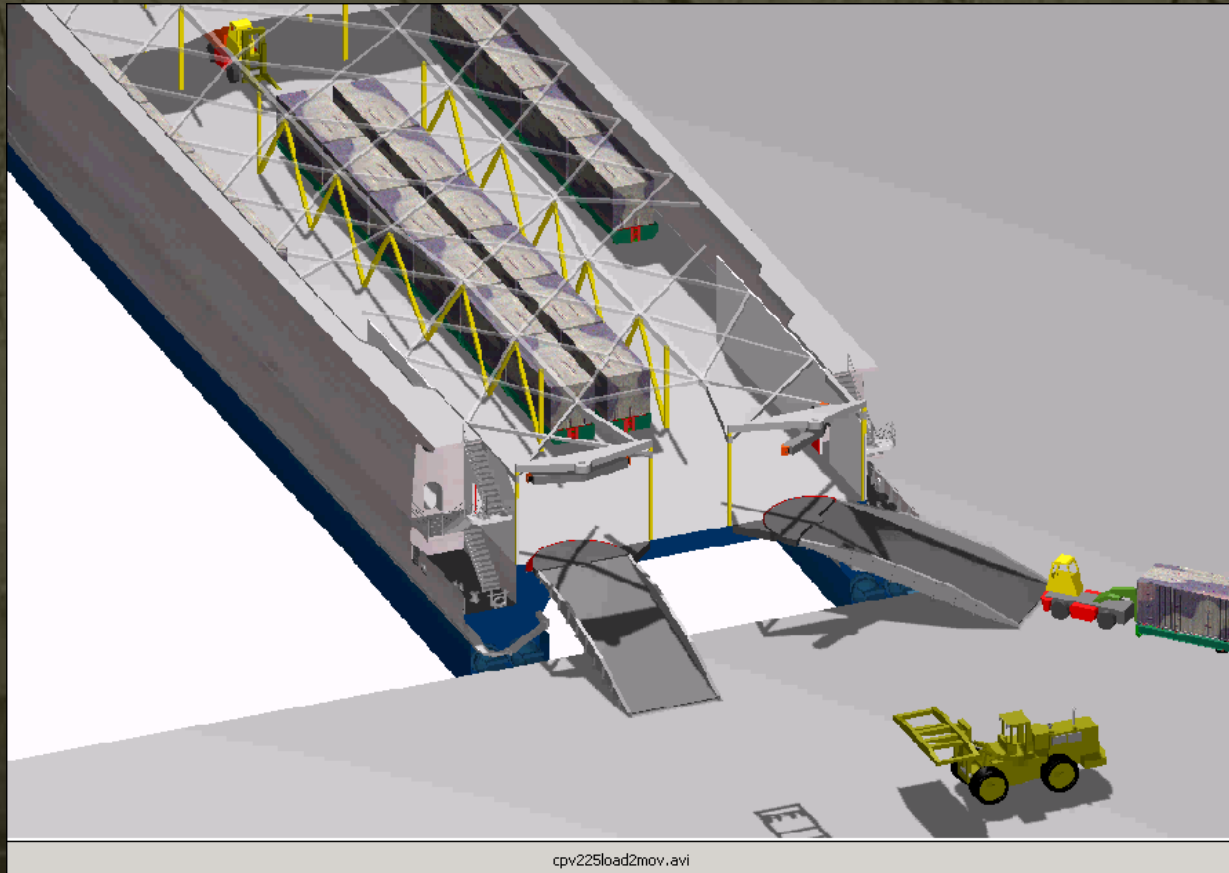


LOA	112.6m
Beam	30.3m
Draft (loaded)	3.8m
Speed (light)	49 knots
Speed (loaded)	42 knots (1000 tons DWT)
Range at 40 knots	5000 nm
Range at 25 knots	8850 nm
Fuel Capacity	252,000 gallons
Crew	12
Capacity	1000 tons or 1500 tons (overload)

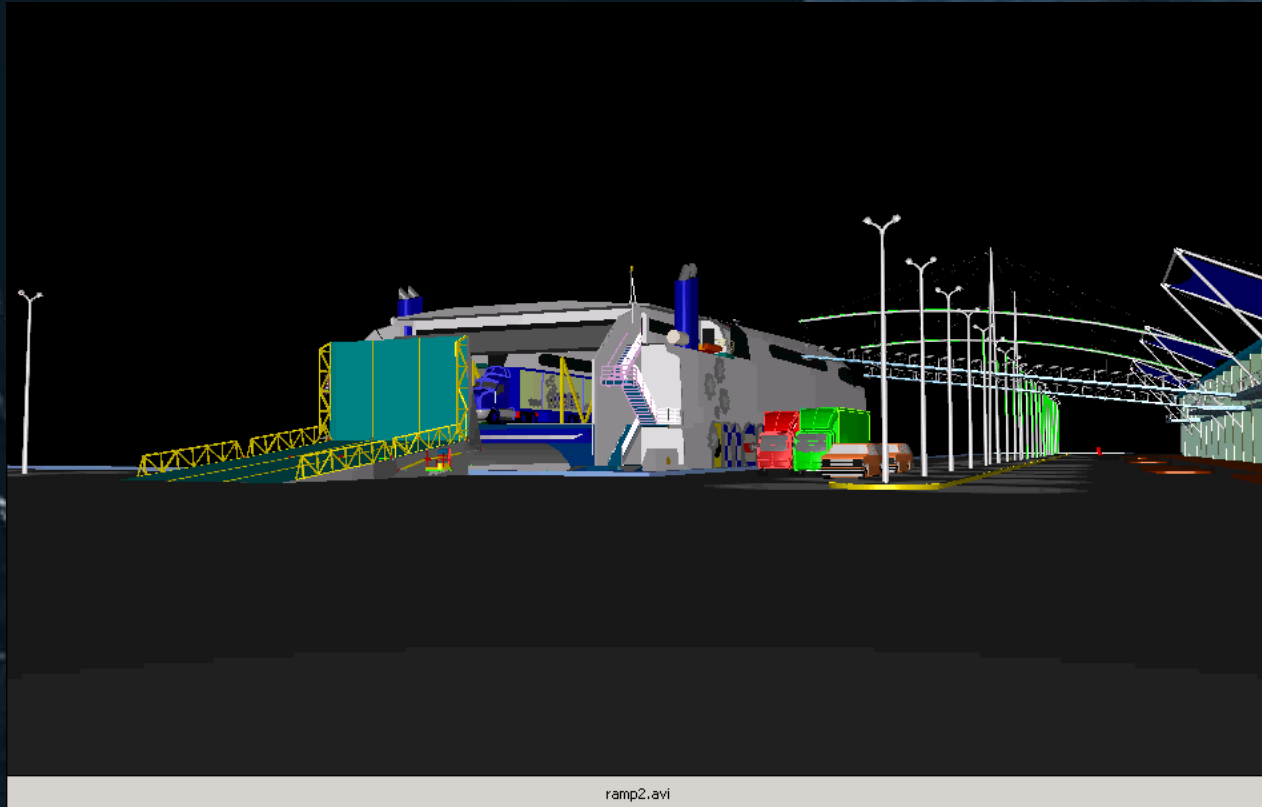
Commercial Wave Piercing Catamaran Capability 112m SEAFRAME



112m On-Load Off-Load US Military Configuration

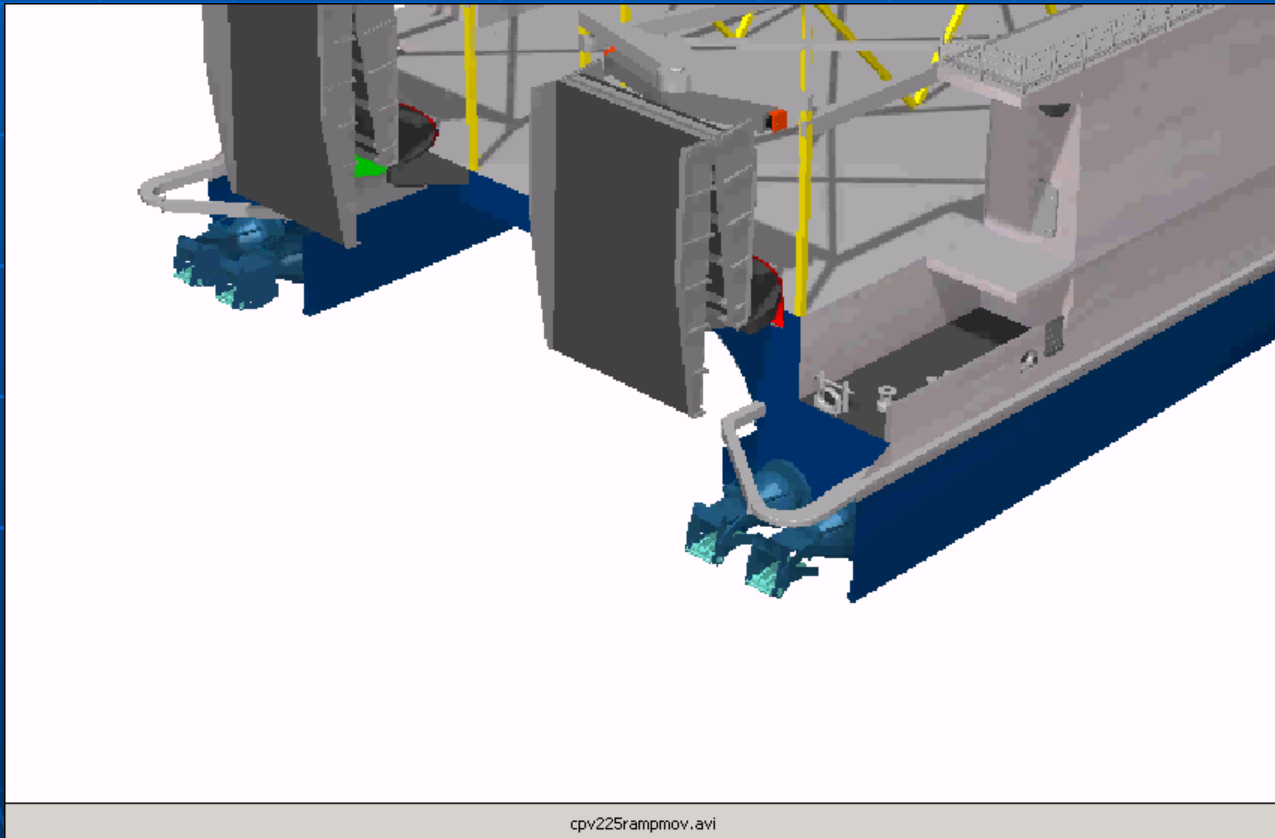


112m On-Load Off-Load Commercial Terminal Configuration



112M SEAFRAME

Organic Articulating Ramp



Military Wave Piercing Catamaran Capability

112 m Seaframe Helo Transport

■ Requirement for Helo Transport

- Deploy helo squadron from US to Straits of Hormuz
- Helos consist of (20) CH-53s, (9) UH-1, and (18) AH-1s
- 8221 nm from East Coast (Wilmington, NC thru Suez)
- 11666 nm from West Coast (San Diego, CA thru Suez)
- Must have helos to Sea Base in 14 days of notification to deploy
- Helos must be able to fly on and off the ship to Sea Base

Military Wave Piercing Catamaran Capability

112 m Seaframe Helo Transport

Vessel Load Combination with Summary

- From East Coast thru Suez (8221 nm)
 - Average speed 39+ knots
 - 1x UNREP upon entry into the Med or possible stop over in Rota for refueling (4-6 hours)
 - Suez Canal transit (approx 14 hours)
 - Total transit time (9 days, 14 hours)
- From West Coast thru Suez (11666 nm)
 - Average speed 39+ knots
 - Panama Canal transit (approx 10 hours)
 - 2x UNREP upon entry into Atlantic (East Coast) and second entry into the Med or possible stop over in Rota for refueling (4-6 hours each)
 - Suez Canal transit (approx 14 hours)
 - Total transit time (13 days, 18 hours)

Future Wave Piercing Catamaran Capability

112 m Seaframe Helo Transport

- Anticipated lightship for the 112m Helo Transport is 1550 tonnes, with 1450 tonnes available deadweight for a departure displacement of 3000 tonnes
 - Average speed 38 knots over a range of 4675 nm at 90% MCR
 - Average speed of 40+ knots over a range of 4439 nm at 100% MCR
- Alternative configuration with a departure displacement of 2500 tonnes with a reduced fuel requirement and the same complement of aircraft.
 - Average speed 41 knots over a range of 3166 nm at 90% MCR
 - Average speed of 43 knots over a range of 3007 nm at 100% MCR